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Question Paper Code: 55A03

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

Fifth Semester

Agriculture Engineering

15UAG503 - PLANT PROTECTION AND HARVESTING EQUIPMENTS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- Which of the following is correct order of agricultural practices? CO1- R
 - Soil preparation – Irrigation – Sowing– Weeding – Harvesting
 - Soil preparation – Sowing – Irrigation – Weeding – Harvesting
 - Soil preparation – Weeding – Sowing – Irrigation– Harvesting
 - Soil preparation – Irrigation – Weeding – Sowing– Harvesting
- The process of removal of undesirable plants is known as CO1- R
 - Seeding
 - Weeding
 - Threshing
 - Winnowing
- The spray pattern formed in high-pressure high-volume sprayer is CO2- R
 - Oval shape
 - Round shape
 - Irregular
 - Cone shape
- The valve used for filling air in the container of a sprayer from a source of compressed air CO2- R
 - Relief valve
 - One way valve
 - Bi directional valve
 - Schrader valve
- The total permissible loss in a combine harvester could be of the order of CO3- R
 - 6 to 10 percent
 - 12 to 16 percent
 - 8 to 9 percent
 - 1.5 to 3 percent
- The cutter bar of a vertical conveyer reaper is set to the direction of motion at about CO3- R
 - 78°
 - 88°
 - 68°
 - 48°

7. The thresher used for especially sunflower CO4- R
 (a) Axial flow thresher (b) Rasp bar thresher (c) Peg tooth type (d) Spike tooth
8. For better threshing of a crop the optimum moisture content is CO4- R
 (a) 10 - 12 % (b) 12 - 15 % (c) 15 - 20 % (d) 17 – 2 5%
9. The metering mechanism used for mustard seed is: CO5- R
 (a) Fluted roller (b) Vertical plate type (c) Cell fill type (d) Stud roller type
10. The blower of pneumatic seed drill is operated by: CO5- R
 (a) Tractor PTO (b) Tractor hydraulic
 (c) Chain and sprocket (d) Gear operated

PART – B (5 x 2= 10Marks)

11. List the components of dryland weeder. CO1- R
12. Explain the working principle of sprayers. CO2- U
13. Describe the types of cutting mechanism of a crop from the harvesters. CO3- R
14. Draw the diagram of a chaff cutter with its parts. CO4- R
15. List the advantages of Pneumatic planters. CO5- R

PART – C (5 x 16= 80 Marks)

16. (a) Explain the working principle of any five Weeding and Intercultural equipment with neat sketch. CO1- U (16)
- Or
- (b) Explain the work flow of engine operated rotary weeder in detail. CO1- U (16)
17. (a) (i) Differentiate between Number Median Diameter (NMD) and Volume Median Diameter (VMD). CO2- U (8)
- (ii) Explain the construction and working of ultra low volume sprayer. CO2- U (8)
- Or
- (b) (i) Describe the types of duster with the principles. Explain in detail. CO2- U (8)
- (ii) Explain the care and maintenance of plant protection devices. CO2- U (8)

18. (a) Discuss the working and construction of mowers and windrowers. CO3- U (16)
- Or
- (b) Explain the components and specification of combine harvester with neat sketch. CO3- U (16)
19. (a) Explain the working principle of threshers and losses associated with it. CO4- U (16)
- Or
- (b) Explain the significance and functions of a fruit plucker, tree shakers and other fruit harvesting machinery in detail. CO4- U (16)
20. (a) (i) Discuss the working process of reversible plough with neat sketch. CO5- U (8)
- (ii) Describe how the seed and broadcasting devices varies from the conventional methods. CO5- U (8)
- Or
- (b) (i) Write short notes on coconut tree climber with the working process. CO5- U (8)
- (ii) Explain the principle and components of tractor operated rhizome planter in detail. CO5- U (8)

